

Official Amendment  
Serial No. – 10/625,915  
Docket No. – UVD 0280 IA / UD 268

RECEIVED  
CENTRAL FAX CENTER  
OCT 25 2006

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the present application:

1. (Previously Presented) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and a valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof, and at least one rare earth element is in the tetravalent oxidation state, and wherein the valence stabilizer consists essentially of an inorganic valence stabilizer.
2. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex has a solubility in water of between about  $5 \times 10^{-1}$  and about  $1 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.
3. (Original) The conversion coating of claim 2 wherein the solubility of the rare earth/valence stabilizer complex in water is between about  $5 \times 10^{-2}$  and about  $5 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.
4. (Original) The conversion coating of claim 1 wherein there is an electrostatic barrier layer around the rare earth/valence stabilizer complex in aqueous solution.
5. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex acts as an ion exchange agent towards corrosive ions.

Best Available Copy

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

6. (Original) The conversion coating of claim 1 wherein the conversion coating is between about 25 and about 10,000 nanometers thick.
7. (Original) The conversion coating of claim 6 wherein the conversion coating is between about 100 and about 500 nanometers thick.
8. (Original) The conversion coating of claim 1 wherein the conversion coating has a morphology which enhances adhesion of a coating applied over the conversion coating.
9. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex has a central cavity containing a cerium, praseodymium, or terbium ion and an additional ion.
10. (Original) The conversion coating of claim 9 wherein the additional ion is  $B^{+3}$ ,  $Al^{+3}$ ,  $Si^{+4}$ ,  $P^{+5}$ ,  $Ti^{+4}$ ,  $V^{+5}$ ,  $V^{+4}$ ,  $Cr^{+6}$ ,  $Cr^{+3}$ ,  $Mn^{+4}$ ,  $Mn^{+3}$ ,  $Mn^{+2}$ ,  $Fe^{+3}$ ,  $Fe^{+2}$ ,  $Co^{+2}$ ,  $Co^{+3}$ ,  $Ni^{+2}$ ,  $Ni^{+3}$ ,  $Ni^{+4}$ ,  $Cu^{+2}$ ,  $Cu^{+3}$ ,  $Zn^{+2}$ ,  $Ga^{+3}$ ,  $Ge^{+4}$ ,  $As^{+5}$ ,  $As^{+3}$ , or  $Zr^{+4}$ .
11. (Canceled)
12. (Currently Amended) The conversion coating of claim 1[[1]] wherein ~~the valence stabilizer is~~ the inorganic valence stabilizer is selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, titanates, zirconates, bismuthates, germanates, arsenates, selenates, borates, aluminates, silicates, or combinations thereof.
13. (Original) The conversion coating of claim 12 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates,

**Official Amendment**

Serial No. — 10/625,915

Docket No. — UVD 0280 IA / UD 268

periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, or combinations thereof.

14-36. (Canceled)

37. (Currently Amended) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex further ~~comprising~~ comprises a solubility control agent.

38. (Original) The conversion coating of claim 37 wherein the solubility control agent is a cationic solubility control agent or an anionic solubility control agent.

39. (Original) The conversion coating of claim 38 wherein the solubility control agent is the cationic solubility control agent selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Be^{+2}$ ;  $Ba^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $V^{+5}$ ;  $V^{+4}$ ;  $V^{+3}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Cr^{+3}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ni^{+2}$ ;  $Ni^{+3}$ ;  $Ni^{+4}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Os^{+4}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Cd^{+2}$ ;  $Hg^+$ ;  $Hg^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Tl^{+3}$ ;  $Tl^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Pb^{+4}$ ;  $Pb^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $As^{+3}$ ;  $As^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one arsonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one selenonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $NR_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

40. (Original) The conversion coating of claim 39 wherein the cationic solubility control agent is selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $NR_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

41. (Withdrawn) The conversion coating of claim 38 wherein the solubility control agent is the anionic solubility control agent selected from fluorotitanates, chlorotitanates, fluorozirconates, chlorozirconates, fluoroniobates, chloroniobates, fluorotantalates, chlorotantalates, molybdates, tungstates, permanganates, fluoromanganates, chloromanganates, fluoroferrates, chloroferrates, fluorocobaltates, chlorocobaltates, fluorozincates, chlorozincates, borates, fluoroborates, fluoroaluminates, chloroaluminates, carbonates, silicates, fluorosilicates, fluorostannates, nitrates, nitrites, azides, cyanamides, phosphates, phosphites, phosphonates, phosphinites, thiophosphates, thiophosphites, thiophosphonates, thiophosphinites, fluorophosphates, fluoroantimonates, chloroantimonates, sulfates, sulfites, sulfonates, thiosulfates, dithionites, dithionates, fluorosulfates, tellurates, fluorides, chlorides, chlorates, perchlorates, bromides, bromates, iodides, iodates, periodates, heteropolyanions, ferricyanides, ferrocyanides, cyanocobaltates, cyanocuprates, cyanomanganates, cyanates, cyanatoferrates, cyanatocobaltates, cyanatocuprates, cyanatomanganates, thiocyanates, thiocyanatoferrates, thiocyanatocobaltates, thiocyanatocuprates, thiocyanatomanganates, cyanamides, cyanamidoferrates,

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

cyanamidocobaltates, cyanamidocuprates, cyanamidomanganates, nitritoferrates, nitritocobaltates, azides, (thio)carboxylates, di(thio)carboxylates, tri(thio)carboxylates, tetra(thio)carboxylates, (thio)phenolates, di(thio)phenolates, tri(thio)phenolates, tetra(thio)phenolates, (thio)phosphonates, di(thio)phosphonates, tri(thio)phosphonates, (thio)phosphonamides, di(thio)phosphonamides, tri(thio)phosphonamides, amino(thio)phosphonates, diamino(thio)phosphonates, triamino(thio)phosphonates, imino(thio)phosphonates, diimino(thio)phosphonates, (thio)sulfonates, di(thio)sulfonates, tri(thio)sulfonates, (thio)sulfonamides, di(thio)sulfonamides, tri(thio)sulfonamides, amino(thio)sulfonates, diamino(thio)sulfonates, triamino(thio)sulfonates, imino(thio)sulfonates, diimino(thio)sulfonates, (thio)borates, di(thio)borates, (thio)boronates, organic silicates, stibonates, cyanides, cyanochromates, cyanonickelates, cyanatochromates, cyanatonickeles, thiocyanatochromates, thiocyanatonickeles, cyanamidochromates, cyanamidonickelates, nitritonickelates, arsonates, diarsonates, triarsonates, organic selenates, diselenates, triselenates, arsenates, arsenites, fluoroarsenates, chloroarsenates, selenates, selenites, fluorothallates, chlorothallates, iodoamalgam anions, chloromercurates, bromomercurates, osmates, fluoronickelates, chromates, Reinecke's salt, vanadates, or combinations thereof.

42. (Withdrawn) The conversion coating of claim 41 wherein the anionic solubility control agent is selected from fluorotitanates, chlorotitanates, fluorozirconates, chlorozirconates, fluoroniobates, chloroniobates, fluorotantalates, chlorotantalates, molybdates, tungstates, permanganates, fluoromanganates, chloromanganates, fluoroferrates, chloroferrates, fluorocobaltates, chlorocobaltates, fluorozincates, chlorozincates, borates, fluoroborates, fluoroaluminates, chloroaluminates, carbonates, silicates, fluorosilicates, fluorostannates, nitrates, nitrites, azides, cyanamides, phosphates, phosphites, phosphonates, phosphinites, thiophosphates, thiophosphites, thiophosphonates, thiophosphinites, fluorophosphates; fluoroantimonates, chloroantimonates, sulfates, sulfites, sulfonates, thiosulfates, dithionites, dithionates, fluorosulfates, tellurates, fluorides, chlorides, chlorates, perchlorates, bromides,

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

bromates, iodides, iodates, periodates, heteropolyanions, ferricyanides, ferrocyanides, cyanocobaltates, cyanocuprates, cyanomanganates, cyanates, cyanatoferrates, cyanatocobaltates, cyanatocuprates, cyanatomanganates, thiocyanates, thiocyanatoferrates, thiocyanatocobaltates, thiocyanatocuprates, thiocyanatomanganates, cyanamides, cyanamidoferrates, cyanamidocobaltates, cyanamidocuprates, cyanamidomanganates, nitritoferrates, nitritocobaltates, azides, (thio)carboxylates, di(thio)carboxylates, tri(thio)carboxylates, tetra(thio)carboxylates, (thio)phenolates, di(thio)phenolates, tri(thio)phenolates, tetra(thio)phenolates, (thio)phosphonates, di(thio)phosphonates, tri(thio)phosphonates, (thio)phosphonamides, di(thio)phosphonamides, tri(thio)phosphonamides, amino(thio)phosphonates, diamino(thio)phosphonates, triamino(thio)phosphonates, imino(thio)phosphonates, diimino(thio)phosphonates, (thio)sulfonates, di(thio)sulfonates, tri(thio)sulfonates, (thio)sulfonamides, di(thio)sulfonamides, tri(thio)sulfonamides, amino(thio)sulfonates, diamino(thio)sulfonates, triamino(thio)sulfonates, imino(thio)sulfonates, diimino(thio)sulfonates, (thio)borates, di(thio)borates, (thio)boronates, organic silicates, stibonates, or combinations thereof.

43. (Original) The conversion coating of claim 1 wherein the conversion coating is colored.

44. (Original) The conversion coating of claim 43 further comprising an agent which improves color-fastness of the conversion coating.

45. (Original) The conversion coating of claim 44 wherein the agent which improves color-fastness is selected from an active UV blocker, a passive UV blocker, a brightener, or a combination thereof.

46. (Original) The conversion coating of claim 45 wherein the agent which improves color-fastness is the active UV blocker selected from carbon black, graphite, phthalocyanines, or

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

combinations thereof.

47. (Withdrawn) The conversion coating of claim 45 wherein the agent which improves color-fastness is the passive UV blocker selected from titanium oxide, tin oxide, lead oxide, silicon oxide, silicates, aluminosilicates, or combinations thereof.

48. (Withdrawn) The conversion coating of claim 45 wherein the agent which improves color-fastness is the brightener selected from sulfonic acids, sulfonates, sulfonamides, sulfinic acids, sulfinates, sulfones, cyanides, nonionic surfactants, or combinations thereof.

49. (Withdrawn) The conversion coating of claim 43 wherein the color is formed by a dye selected from vat dyes, mordant dyes, lake dyes, disperse dyes, azo dyes, triazene dyes, triphenylmethane dyes, azine dyes, formazan dyes, phthalocyanine dyes, Schiff Base dyes, naturally-occurring dyes, inorganic pigments, or combinations thereof.

50-162 (Canceled)

163. (Currently Amended) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and a valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein

the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof,

at least one rare earth element is in the tetravalent oxidation state, and

the rare earth/valence stabilizer complex is sparingly soluble in water at about 25°C and about 760 Torr, and

wherein the valence stabilizer consists essentially of an inorganic valence stabilizer.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

164. (Canceled)

Please add the following new claims:

165. (New) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and a valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof, and at least one rare earth element is in the tetravalent oxidation state, wherein the rare earth/valence stabilizer complex has a central cavity containing a cerium, praseodymium, or terbium ion and an additional ion, wherein the additional ion is  $B^{+3}$ ,  $Al^{+3}$ ,  $Si^{+4}$ ,  $P^{+5}$ ,  $Ti^{+4}$ ,  $V^{+5}$ ,  $V^{+4}$ ,  $Cr^{+6}$ ,  $Cr^{+3}$ ,  $Mn^{+4}$ ,  $Mn^{+3}$ ,  $Mn^{+2}$ ,  $Fe^{+3}$ ,  $Fe^{+2}$ ,  $Co^{+2}$ ,  $Co^{+3}$ ,  $Ni^{+2}$ ,  $Ni^{+3}$ ,  $Ni^{+4}$ ,  $Cu^{+2}$ ,  $Cu^{+3}$ ,  $Zn^{+2}$ ,  $Ga^{+3}$ ,  $Ge^{+4}$ ,  $As^{+5}$ ,  $As^{+3}$ , or  $Zr^{+4}$ .

166. (New) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex has a solubility in water of between about  $5 \times 10^{-1}$  and about  $1 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.

167. (New) The conversion coating of claim 166 wherein the solubility of the rare earth/valence stabilizer complex in water is between about  $5 \times 10^{-2}$  and about  $5 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.

168. (New) The conversion coating of claim 165 wherein there is an electrostatic barrier layer around the rare earth/valence stabilizer complex in aqueous solution.



**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

169. (New) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex acts as an ion exchange agent towards corrosive ions.

170. (New) The conversion coating of claim 165 wherein the conversion coating is between about 25 and about 10,000 nanometers thick.

171. (New) The conversion coating of claim 170 wherein the conversion coating is between about 100 and about 500 nanometers thick.

172. (New) The conversion coating of claim 165 wherein the conversion coating has a morphology which enhances adhesion of a coating applied over the conversion coating.

173. (New) The conversion coating of claim 165 wherein the valence stabilizer is an inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, titanates, zirconates, bismuthates, germanates, arsenates, selenates, borates, aluminates, silicates, or combinations thereof.

174. (New) The conversion coating of claim 173 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, or combinations thereof.

175. (New) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex further comprises a solubility control agent.

**Official Amendment**

Serial No. — 10/625,915

Docket No. — UVD 0280 IA / UD 268

176. (New) The conversion coating of claim 175 wherein the solubility control agent is a cationic solubility control agent or an anionic solubility control agent.

177. (New) The conversion coating of claim 176 wherein the solubility control agent is the cationic solubility control agent selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Be^{+2}$ ;  $Ba^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $V^{+5}$ ;  $V^{+4}$ ;  $V^{+3}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Cr^{+3}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ni^{+2}$ ;  $Ni^{+3}$ ;  $Ni^{+4}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Os^{+4}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Cd^{+2}$ ;  $Hg^+$ ;  $Hg^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Tl^{+3}$ ;  $Tl^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Pb^{+4}$ ;  $Pb^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $As^{+3}$ ;  $As^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one arsonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one selenonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $NR_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

178. (New) The conversion coating of claim 177 wherein the cationic solubility control agent is selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one stibonium site; organic

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $\text{NR}_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

179. (New) The conversion coating of claim 165 wherein the conversion coating is colored.

180. (New) The conversion coating of claim 179 further comprising an agent which improves color-fastness of the conversion coating.

181. (New) The conversion coating of claim 180 wherein the agent which improves color-fastness is selected from an active UV blocker, a passive UV blocker, a brightener, or a combination thereof.

182. (New) The conversion coating of claim 181 wherein the agent which improves color-fastness is the active UV blocker selected from carbon black, graphite, phthalocyanines, or combinations thereof.

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**